

5 I claim:

1. A digital document processing system, comprising  
an application dispatcher for receiving an input bytestream representing source data in  
one of a plurality of predetermined data formats and for associating the input bytestream with one  
of said plurality of predetermined data formats,

10 a document agent for interpreting said input bytestream as a function of said associated  
predetermined data format and for parsing the input bytestream into a stream of document objects  
representative of internal representations of primitive structures within the input bytestream, and  
a core document engine for converting said document objects into an internal  
representation data format and for mapping said internal representation data to a location on a  
15 display.

2. A digital document system according to claim 1, further comprising  
a shape processor for processing said internal representation data to drive an output  
device.

20 3. A digital document processing system as claimed in claim 1, wherein said source data  
defines the content and structure of a digital document, and wherein said internal representation  
data describes said structure in terms of document objects of a plurality of data types and  
parameters defining properties of specific instances of the document objects, separately from  
25 said content.

4. A digital document processing system according to claim 3, wherein the parameters  
defining properties of specific instances include properties selected from the group consisting of  
dimensional, temporal, and physical.

5. A digital document processing system as claimed in claim 3, further including a library of  
30 objects types, said internal representation data being based on the content of said library.

5 6. A digital document processing system as claimed in claim 3, wherein said core document engine includes a parsing and rendering module adapted to generate an object and parameter based representation of a specific view of at least part of said internal representation data, on the basis of a first control input to said parsing and rendering module.

10 7. A digital document processing system according to claim 6 wherein said parameter based representation includes parameters selected from the group consisting of fill, path, bounding box and transparency.

15 8. A digital document processing system according to claim 5, further including a shape processing module adapted to receive said object and parameter based representation of said specific view from said parsing and rendering module and to convert said object and parameter based representation into an output data format suitable for driving a particular output device.

20 9. A digital document processing system according to claim 8, wherein said shape processing module processes said objects on the basis of a shape defining the shape of the object bounded by the boundary box, the data content of the object and the transparency of the object.

25 10. A digital document processing system according to claim 8, wherein said shape processing module processes said objects on the basis of a shape defining the shape of the object bounded by the boundary box representative of a defined area on a display on which an object may be rendered.

30 11. A digital document processing system according to claim 1, wherein the system employs a chrominance/luminance-based colour model to describe colour data.

12. A digital document processing system according to claim 1, wherein the system employs a universal text encoding model.

30 13. A digital document processing system according to claim 12, wherein universal text encoding includes unicode, shift-mapping and big-5.

5 14. A digital document processing system according to claim 1, further including a process for compacting an internal representation of a source document by combining document objects having similar attributes.

15. A digital document processing system according to claim 1, further including a process for compacting an internal representation of a source document by combining document objects  
10 having similar style attributes.

16. A digital document processing system according to claim 1, wherein the system is adapted for multiple parallel implementation for processing source data from one or more data sources and for generating one or more sets of output representation data.

15 17. A digital document processing system according to claim 1, further comprising a graphical user interface for generating internal representations of interactive visual displays to be employed by a user for controlling the digital document processing system.

18. A digital document processing system according to claim 17, comprising a data processing device incorporating a graphical user interface.

20 19. A digital document processing system according to claim 1, having a platform adapted for being embedded into a device selected from the group consisting of a hand held computer, a mobile telephone, a set top box, a facsimile machine, a copier, an embedded computer system, a printer, an in-car system and a computer workstation.

20. A digital document processing system according to claim 1, having a processor including a core processor system.

25 21. A digital document processing system according to claim 20, wherein said core processor is a RISC processor.

22. A digital document processing system according to claim 1, wherein the document agent

5 includes an export process for exporting data in a selected format.

23. A digital document processing system according to claim 1, adapted for operating on a multiple processing system.

10 24. A method for displaying content, comprising  
receiving a source of data representative of the digital content having a structure and data content,  
processing the source of data to identify a file format associated therewith,  
translating the source of data, as a function of its identified file format, into an internal representation that includes a first data structure for storing information about the structure of the digital content, and a second data structure for storing information about the data content  
15 contained in the digital content,  
generating a content file representative of an internal representation of content to be presented to a user, by processing the first data structure to determine a structure for a portion of the content file and by processing the second data structure to determine data content for the respective portion of the content file.  
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25 25. A method according to claim 24, wherein  
receiving a source of data includes receiving a stream of input data from a data source.

26. A method according to claim 25, wherein the data source is selected from the group consisting of a data file, a byte stream generated from a peripheral device, and a byte stream  
25 generated from a data file.

27. A method according to claim 25, wherein  
processing the source of data includes presenting information about the source of data to a plurality of document agents, each being capable of translating a data source of a known file format into the internal representation.

- 5 28. A method according to claim 24, wherein  
translating the source of data into an internal representation includes processing the  
source of data to identify data therein, and mapping the identified data to a set of object types  
representative of types of content that are present in a source of data.
- 10 29. A method according to claim 28, wherein mapping includes mapping identified data to a  
set of object types suitable for translating source data representative of a content selected from  
the group consisting of a digital document, an audio/visual presentation, a music file, an  
interactive script, a user interface file and an image file.
- 15 30. A method according to claim 24, wherein mapping includes mapping the identified data  
to a set of object types including a bitmap object type, a vector graphic object type, a video type,  
an animation type, a button type, a script type and a text object type.
- 20 31. A method according to claim 24, wherein translating the source of data includes filtering  
portions of the source data to create a filtered internal representation of the source document.
32. A method according to claim 24, wherein translating the source of data includes altering  
the first data structure to adjust the structure of the digital content.
33. A method according to claim 24, wherein translating the source of data includes the  
further act of substituting data content in the second data structure to thereby modify content  
presented within the internal representation.
- 25 34. A method according to claim 24, wherein translating the source of data includes  
translating the source of data into a set of document objects of known object types, wherein a  
document object includes a set of parameters that define dimensional, temporal and physical  
characteristics of the document object.
35. A method according to claim 24, wherein the process is adapted for running on multiple

5 processors.

36. A method according to claim 24, wherein the process provided a text encoding process, for encoding in a format selected from the group consisting of unicode, shift-mapping and big-5.

10 37. A method according to claim 24, wherein generating a content data file includes parsing a set of document objects having associated parameters, to define a structure and content for the content data file.

38. A method according to claim 37, further including processing the structure and content of the content data file to create a set of objects that define the content data file and are capable of being rendered on an output device.

15 39. A method according to claim 38, wherein processing the document objects includes processing the associated parameters for flowing content into a structure defined by the document object.

20 40. A method according to claim 38, wherein the output device includes a display selected from the group consisting of a visual display, an audio speaker, a video player, a television display, printer, disc drive, network, and an embedded display.

41. A system for interacting with content in a digital document, comprising  
a document agent for converting content in the digital document into a set of document  
objects representative of internal representations of primitive structures, and  
25 a core document engine for rendering said document objects to generate a display  
representative of the digital content,  
a user interface for detecting input signals representative of input for modifying the  
content of the digital document, and  
a process for changing the internal representation of the content as a function of the input  
30 signals, to modify the display of the digital content.

- 5 42. A system according to claim 41, wherein the user interface includes an input device selected from the group consisting of a mouse, a touch pad, a touch screen, a joy stick, a remote control and a keypad.

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